CHAPTER 1 INTRODUCTION

This update provides an overview of the activities and accomplishments achieved since adoption of the Lake Okeechobee Surface Water Improvement and Management (SWIM) Plan Update in January 1993. This update also describes the current and proposed activities for the next five years.

Several of the projects described in the 1993 SWIM Plan Update have been completed, and highlights of those projects are provided. Each chapter is developed with three components: (1) a summary of progress to date on each program or project; (2) the present condition as it exists in the watershed or the lake and associated issues; and, (3) the goals, objectives and strategies to address these issues.

The structure of this plan includes goals, objectives, and strategies that provide the framework around which the South Florida Water Management District (SFWMD) initiates or continues programs to protect the lake. The goals provide the general direction for developing cohesive management strategies. The objectives describe more specific approaches towards achieving a particular goal, while a strategy provides the detail needed to accomplish an objective.

A. SWIM PLAN REQUIREMENTS AND PLANNING PROCESS

A.1. Plan Requirements

The SWIM Act was adopted by the Florida legislature in 1987. This law requires that Water Management Districts (WMDs), in conjunction with other state agencies and local governments, prepare SWIM Plans for priority water bodies as identified by the Act. The 1987 legislation required the SFWMD to develop plans for Lake Okeechobee, the Indian River Lagoon, and Biscayne Bay. The SWIM Act also required that the plans demonstrate strategies and programs to address the following central concerns:

- (a) Point and nonpoint source pollution (Sec. 373.451 (4) (a), F.S.)
- (b) Destruction of natural systems (Sec. 373.451 (4) (b), F.S.)
- (c) Correction and prevention of surface water problems (Sec. 373.451 (5), F.S.)
- (d) Research for better management of surface waters and associated natural systems (Sec. 373.451 (7), F.S.)

SWIM legislation also specifies the minimum requirements for the plans contents (Section 373.453(2) F.S.) which are described in the Florida Department of Environmental Protection (FDEP) SWIM Review Procedures Manual (FDER, 1990a).

For this SWIM Plan Update, required descriptions of the water body, point and nonpoint sources of pollution, land uses, and agency jurisdictions are in Chapter 2 and the appendices. The remaining requirements which describe strategies for restoring and protecting water quality, including the current condition and future plans for restoring the water body, are presented within the individual plan chapters (Chapters 2 through 8).

The FDEP is required by state law (Chapter 373.456) to review each SWIM Plan for consistency with state water policy as outlined in Chapter 62-40, Florida Administrative Code (F.A.C). Chapter 62-40 is intended to clarify state water policy as expressed in Chapters 187, 373, and 403 of the Florida Statues (F.S.) and to otherwise provide guidance to the FDEP and WMDs in the development and preparation of water management programs, rules and plans. The intent of Chapter 62-40 is as follows: *The waters of the state are among its basic resources. Such waters should be managed to conserve and protect natural resources and scenic beauty and to realize the full beneficial use of the resource.* Chapter 62-40 therefore provides the basis for the FDEP's review of all SFWMD SWIM planning documents with respect to meeting state water policy requirements. SWIM legislation is provided in Appendix A of this plan.

Chapter 62-40.420 requires the WMDs to develop Pollutant Load Reduction Goals (PLRGs) for SWIM water bodies. PLRGs are defined as targeted reductions in pollutant loadings to a water body needed to achieve watershed management goals. Watershed management goals are defined as the goals that encompass any one or all of the major WMDs responsibilities (flood protection, water supply, water quality, and environmental system protection and enhancement). The goals provide the general direction for developing cohesive strategies to manage water resources within a drainage basin, subbasin or segment thereof.

The PLRG developed for Lake Okeechobee is a 40% reduction in phosphorus loading from the watershed, based on the conditions that existed from 1973-1979 (Federico *et al.* 1981), with an expected downstream benefit of maintaining the trophic state and the biological integrity of the lake. Early reports clearly indicated that phosphorus was a major contributor to accelerated eutrophication of Lake Okeechobee (Davis and Marshall 1975, Federico *et al.* 1981, Joyner 1972, Kissimmee-Okeechobee Basin Report 1972). Eutrophication was and remains a clear threat to the health of this lake, and is the focus of the majority of projects designed to improve the condition of the lake. Progress towards achieving the PLRG is evaluated by comparing a target 5-year rolling average of phosphorus loading to the lake (as specified in Federico *et al.* 1981) to the actual calculated loading from the discharge structures (described in more detail in Chapter 3).

A.2. Review and Approval Process

The SWIM Act sets forth a specific process for the preparation, review and approval of SWIM Plans (Figure 1). It requires the SFWMD to develop SWIM plans in cooperation with the FDEP and other agencies. The review process is initiated when the SFWMD submits the draft plan to the FDEP and other agencies for a 45-day agency review period (Section 373.455, F.S.). Other agencies review the plan for its effects on the resources within their respective jurisdictions and make recommendations. After the 45-day review period, the SFWMD has 15 days to prepare a response and present the agencies positions to the Governing Board.

There are several review criteria including cost, funding availability, and the likelihood that the plan will significantly improve or protect water quality and associated natural resources. If the FDEP determines that a SWIM plan does not meet minimum plan requirements, the FDEP shall recommend to the SFWMD modifications or additions to the plan pursuant to Sec. 373.456(1), F.S.

The first draft of the Lake Okeechobee SWIM Plan Update was presented to the SFWMD's Governing Board on January 15, 1997. At this meeting, the Governing Board was presented an overview of the plan and gave approval to initiate the public participation process. On January 29 1997, two public meetings were held in Okeechobee to discuss the SWIM Plan Update. Additional meetings were held in March 25 and 26, 1997 in Okeechobee and Clewiston, respectively.

Comments are assembled in Appendix F, Lake Okeechobee SWIM Plan Update: Public, Local, Governmental and Agency Comments. A revised Final Draft was approved by the Governing Board on June 11, 1997. The Plan was then transmitted to the FDEP to ensure consistency with the State Water Policy and the State Comprehensive Plan, pursuant to Sec. 373.456, F.S.

The FDEP found the Plan Update consistent with Chapter 62-40, F.A.C. (State Water Policy) and Chapter 187, F.S. (State Comprehensive Plan) on July 4th, 1997 and the approved plan became effective on August 8th, with public notice in the Florida Administrative Weekly.

Figure 1. Review Process for the SWIM Plan Update.

Governing **Board** Workshop

Discuss First Draft of Plan January 15, 1997

Public Meetings

January 29, March 25 & 26, 1997

Final Draft **Submitted** for 373.455 **Review** (45 Days)

DFP

DACS DCA

Local Governments

1997

GFWFC

April 7-May 22,

SFWMD Review of

Agency Comments

(15 Days) June 6, 1997

SWIM Planning Process

FINAL DRAFT **SWIM PLAN ADOPTED** August 8, 1997

Approved Final Draft 373.456 **Consistency** Review

> (30 Days) July 3, 1997

Final Draft Approved by **SFWMD** Governing **Board**

June 12, 1997

B. RELATIONSHIP OF LAKE OKEECHOBEE SWIM PROGRAM TO OTHER SWIM PLANNING EFFORTS

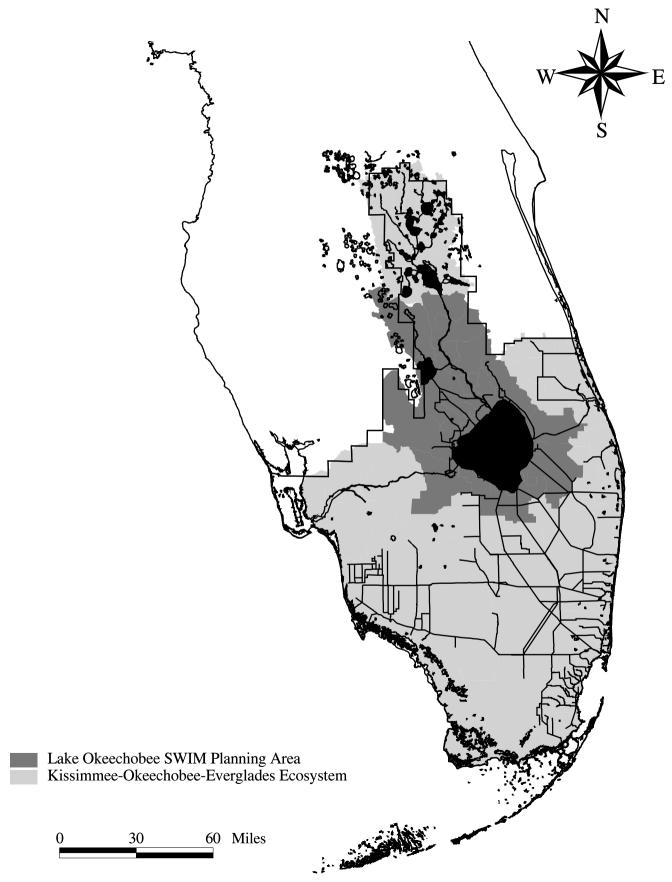
Lake Okeechobee is a key component of South Florida's Kissimmee-Okeechobee-Everglades (KOE) surface water hydrologic and ecological system. The system begins in Central Florida near Orlando, extends southward through the Kissimmee chain of lakes, the Kissimmee River, Lake Okeechobee, and continues southward through the Everglades into Florida Bay. In addition, through man-made canals, Lake Okeechobee is connected to the St. Lucie and Caloosahatchee estuaries. The SWIM Act Priority Water Body List identified one portion of this system, Lake Okeechobee, as an area of immediate high priority. The SFWMD realized that this piece of the KOE system could not be looked at in isolation from the rest of the system, but did not believe that the planning and research resources of the SFWMD were adequate to address this entire system within a single SWIM plan. The KOE area was divided, based on hydrologic features, into SWIM planning areas.

Boundaries of SWIM planning areas were determined by taking the receiving water body (in this case Lake Okeechobee) and including the tributary basins that deliver water into the lake. Thus, the Lake Okeechobee SWIM Planning Area (Figure 2) includes such major inflow basins as the Kissimmee River (Lake Kissimmee is a receiving water body that begins another Planning Area within the KOE system), canals downstream from Lake Istokpoga, Fisheating Creek, various basins that pump water directly into the lake for routine drainage purposes, the St. Lucie Canal, and the Taylor Creek/Nubbin Slough (TCNS) Basin.

The basin boundaries of the Lake Okeechobee SWIM Planning Area overlap with those of the Everglades Protection Area (EPA) and the Indian River Lagoon (IRL). This overlap occurs for a variety of reasons, primarily because Lake Okeechobee is a major source of inflow water for the Everglades region and to the IRL when C-44 is below 14.5 ft. Water use demands and flood protection requirements within the Everglades influence water supply, water quality and lake water level issues within the Lake Okeechobee SWIM Planning Area.

This Lake Okeechobee SWIM Plan Update includes descriptions of two projects associated with the Everglades Forever Act (Sec. 373.4592 F.S, 1994). The first project requires the Chapter 298 Special Drainage Districts discharging into Lake Okeechobee to complete conveyance system modifications sufficient to redirect 80% of their runoff to the SFWMD's primary canal system for subsequent treatment in storm water treatment areas (STAs). The second project requires the FDEP and the SFWMD to request the United State Army Corps of Engineers (USACE) to evaluate Lake Okeechobee regulatory releases. This evaluation will facilitate the releases of water into the EPA in order to further improve hydroperiod restoration and reduce harmful discharges to the estuaries and wasteful discharges to tide.

Figure 2. Lake Okeechobee SWIM Planning Area



It is critical to the SWIM process that the related plans are consistent and that these plans be coordinated with other SWIM planning efforts currently underway in South Florida (e.g., Indian River Lagoon SWIM, Biscayne Bay SWIM, and the Upper Kissimmee Basin plans).

C. GOALS OF THE LAKE OKEECHOBEE SWIM PLAN UPDATE

The goals for each part of this update are summarized below:

- **Water Quality Goal** Reduce nutrients that stimulate algal blooms and ensure that the lake can support and sustain a healthy, natural ecosystem.
- **Environmental Resources Goal** Protect and enhance the environmental resources of Lake Okeechobee, and enhance the lake's functional role in the regional aquatic ecosystem.
- Water Supply/Flood Protection Goal Maintain an adequate quantity and quality of water in Lake Okeechobee to meet reasonable and beneficial use requirements while ensuring that adequate flood water storage capacity is maintained in the lake.
- **Navigation Goal** Assist in maintaining navigability within the federally-operated navigation projects in the Lake Okeechobee Planning Area (Kissimmee River and Okeechobee Waterway, including the Caloosahatchee River and St. Lucie Canal).
- **Recreation Goal** Promote and provide appropriate recreational opportunities consistent with the other SWIM goals.
- **Public Information/Intergovernmental Coordination Goal** Implement an effective public awareness and participation program to provide citizens with information concerning Lake Okeechobee water resource management issues.